

Supplemental appendix for “Reconsidering Economic Leverage and Vulnerability: Trade Ties, Sanction Threats, and the Success of Economic Coercion”

July 26, 2018

1 Introduction

This appendix includes additional models demonstrating the robustness of the results presented in the main text, as well as summary statistics for episode-level and state-year level data. One must make a number of coding choices when examining how trade dependence influences sanction onset and outcomes. Although I justify the models presented in the main text as ultimately the best suited to test my hypotheses, the supplemental models that follow demonstrate that results are nonetheless robust to a wide variety of alternate specifications—including the addition or subtraction of control variables, alternate operationalization of the dependent variable, use of random effects, etc.

Table A.1 presents state-year models examining the onset of sanction threats for targets, which demonstrate that my results likely do not suffer from bias due to a selection effect. The next set of tables consider alternate specifications of my main models. Tables A.2 through A.8 present additional model examining sanction cases, while Tables A.9 through A.13 present state year models examining initiation by potential senders. Finally, Tables A.14 and A.15 present summary statistics.

Table A.1: Coefficients and 95 percent confidence bounds examining sanction onset as a target, 1950-2005

| | Onset of any threat | | Onset of non-economic threat | |
|-----------------------------------|---------------------|-----------------|------------------------------|-----------------|
| | Model A1 | Model A2 | Model A3 | Model A4 |
| Generalized out-degree centrality | 1.07* | 1.47 | −0.01 | −3.22 |
| | (0.13, 2.01) | (−1.22, 4.17) | (−1.23, 1.21) | (−6.67, 0.22) |
| PageRank | 1.14 | 1.11 | 0.72 | 0.34 |
| | (−0.06, 2.34) | (−0.38, 2.60) | (−0.61, 2.06) | (−1.25, 1.93) |
| GODC X PageRank | −4.12* | −4.74 | 2.01 | 10.39* |
| | (−7.93, −0.31) | (−14.01, 4.52) | (−2.40, 6.42) | (0.05, 20.74) |
| Trade/GDP | 0.59* | 1.22*** | −0.16 | 0.76 |
| | (0.10, 1.09) | (0.50, 1.94) | (−0.84, 0.52) | (−0.10, 1.62) |
| log GDP per capita | 0.44*** | 0.59*** | 0.13 | 0.34*** |
| | (0.31, 0.57) | (0.41, 0.77) | (−0.02, 0.28) | (0.14, 0.54) |
| log Population | 0.47*** | 0.48*** | 0.26*** | 0.41*** |
| | (0.37, 0.56) | (0.34, 0.62) | (0.15, 0.36) | (0.25, 0.57) |
| Democracy | 0.04 | 0.14 | 0.03 | 0.02 |
| | (−0.18, 0.26) | (−0.12, 0.39) | (−0.26, 0.31) | (−0.31, 0.35) |
| Years since Polity transition | −0.00 | −0.00 | 0.00 | 0.00 |
| | (−0.01, 0.00) | (−0.01, 0.00) | (−0.00, 0.01) | (−0.01, 0.01) |
| Proscribed Behavior | 0.44*** | 0.44*** | 0.62*** | 0.59*** |
| | (0.23, 0.64) | (0.19, 0.69) | (0.35, 0.88) | (0.29, 0.90) |
| Former colony | −0.18 | −0.22 | −0.69 | −0.74 |
| | (−2.26, 1.89) | (−2.31, 1.86) | (−2.77, 1.39) | (−2.83, 1.36) |
| Years since targeted | −0.13*** | −0.10** | −0.08** | −0.07 |
| | (−0.18, −0.08) | (−0.16, −0.03) | (−0.14, −0.02) | (−0.14, 0.00) |
| Years since targeted ² | 0.01** | 0.00 | 0.00* | 0.00 |
| | (0.00, 0.01) | (−0.00, 0.01) | (0.00, 0.01) | (−0.00, 0.01) |
| Years since targeted ³ | −0.00 | −0.00 | −0.00 | −0.00 |
| | (−0.00, 0.00) | (−0.00, 0.00) | (−0.00, 0.00) | (−0.00, 0.00) |
| Constant | −10.40*** | −11.90*** | −5.99*** | −9.00*** |
| | (−13.07, −7.72) | (−15.02, −8.79) | (−8.77, −3.20) | (−12.29, −5.71) |
| Observations | 6,782 | 5,298 | 6,782 | 5,298 |
| Log Likelihood | −1,793.82 | −1,241.89 | −1,293.90 | −970.56 |

Models 9 and 11 include all states; Models 10 and 12 exclude high-income states
*** p less than 0.001, ** p less than 0.01, * p less than 0.05

1.1 Onset of sanction threats for the target

First, I present models considering onset of sanction threats for target states. Theoretically, structural position in the global trade network could influence the likelihood that a state is targeted with sanctions, as senders might see a potential target with high vulnerability as a good prospect for successful economic coercion.¹ Thus, one would expect the same conditions leading to acquiescence—less value to trade partners that are highly connected to the global trade network—to suggest a higher likelihood of sanction onset in a given year. However, given the degree to which domestic interests drive sender behavior, there could be considerably more variation in this process with respect to any specific potential target. Furthermore, some states might not behave in ways that invite sanctions; and some potential targets might behave strategically, changing policy proactively if they believed sanctions could otherwise result (in order to avoid the appearance of weakness that accompanies acquiescence).

The target onset models include an additional explanatory variable capturing former colony status and years since a major regime transition, both of which could put the state on the radar of common senders. Results from Table A.1 suggest that, on average, structural position in the global trade network has no systematic association with the onset of sanction threats for targets. What is apparent is that proscribed behavior has a positive and statistically significant association with sanction threat onset ($p < 0.001$ in all four models).

1.2 Replication of Table 1

Next, Table A.2 presents a replication of Table 1 including random effects (intercepts) for (1) the primary sanction issue and (2) target state, in generalized linear mixed models specified with logit link functions. All results are generally consistent in these models. Although interaction terms are not significant in all models, an analysis of interaction effects returns results looking nearly indistinguishable from those presented in the main text; accordingly, I omit graphics to save space.

¹Importantly, a selection model is not easily applied to examine the onset of sanction threats for targets and target acquiescence simultaneously because sanction threat onset against a given target can occur multiple times in a given year. Indeed, such a model would require aggregating all cases against a given target in a given year, which then complicates the coding of outcome variables, likely introducing error that would outweigh any gains from such a specification.

Table A.2: Replication of Table 1 including random effects for issue and target state

| | Complete Acquiescence | | Complete or Partial Acquiescence | |
|-----------------------------------|----------------------------|----------------------------|----------------------------------|----------------------------|
| | Model A5 | Model A6 | Model A7 | Model A8 |
| Generalized out-degree centrality | -0.53 (-1.80, 0.73) | 1.35 (-0.14, 2.83) | -0.07 (-1.18, 1.04) | 1.57** (0.40, 2.74) |
| PageRank | 5.44*** (3.07, 7.80) | 5.20*** (2.50, 7.90) | 4.78*** (2.55, 7.01) | 4.44*** (2.06, 6.82) |
| GODC X PageRank | -7.61 (-15.39, 0.17) | -9.86* (-18.25, -1.47) | -7.38* (-14.12, -0.65) | -9.39** (-16.10, -2.67) |
| Trade/GDP | -0.43 (-1.50, 0.64) | 0.09 (-1.24, 1.41) | -0.54 (-1.53, 0.44) | -0.21 (-1.37, 0.95) |
| log GDP per capita | | -0.41** (-0.70, -0.11) | | -0.19 (-0.45, 0.08) |
| Democracy | | -0.08 (-0.61, 0.45) | | -0.43 (-0.88, 0.02) |
| Proscribed behavior | | -0.28 (-0.77, 0.21) | | -0.25 (-0.67, 0.17) |
| US sender | | 0.40 (-0.09, 0.89) | | 0.57** (0.16, 0.98) |
| Multilateral sanction | | 0.89** (0.34, 1.44) | | 1.00*** (0.51, 1.48) |
| Imposed sanction | | -0.90*** (-1.34, -0.47) | | -0.86*** (-1.23, -0.50) |
| Constant | -1.61*** (-2.31, -0.91) | 1.40 (-1.09, 3.90) | -0.85* (-1.51, -0.19) | 0.38 (-1.90, 2.67) |
| Observations | 916 | 848 | 916 | 848 |
| Log Likelihood | -381.62 | -333.17 | -475.78 | -422.07 |
| Bayesian Inf. Crit. | 810.98 | 753.99 | 999.29 | 931.79 |

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.3 presents two sets of models. First, Models A5 and A6 drop all cases of sanctions by institutions, given that state decision-making could differ from that of groups of states. Models A7 and A8 present fewer and more control variables, respectively. Again, all results are robust in all four of these additional specifications.

Table A.4 replicates Table 1 with an alternate coding of the dependent variable. Specifically, in these models, I examine acquiescence specifically during the threat stage of a sanctions episode. Accordingly, the control variable for *imposed sanction* is omitted, given that imposition of sanctions signifies a lack of acquiescence during the threat stage (i.e., the DV is always coded as 0 if sanctions are imposed).² As the table shows, results look very similar to those from Table 1. Predicted probabilities (of complete acquiescence) again are not visually distinguishable from those presented in Figure 3 in the main text.

Table A.5 again replicates Table 1, but excludes all sanction cases dealing with “low politics,”

²While I expect that most targets preferring to avoid sanctions would acquiesce during the threat stage, it is possible that a target would misperceive the sender to be bluffing or misjudge its own ability to endure sanctions costs. Thus, I prefer to consider acquiescence during the imposition stage in primary models.

Table A.3: Models ignoring institutions, and Models with fewer/more control variables

| | Ignore institution-senders | | More/fewer controls | |
|-----------------------------------|----------------------------|----------------------------|-----------------------------|---------------------------------|
| | Model A9 | Model A10 | Model A11 | Model A12 |
| Generalized out-degree centrality | −0.50 (−1.61, 0.60) | 0.89 (−0.42, 2.21) | −0.67 (−1.72, 0.38) | 0.75 (−0.55, 2.05) |
| PageRank | 4.01*** (1.83, 6.19) | 3.53** (1.20, 5.86) | 5.54*** (3.58, 7.49) | 4.49*** (2.15, 6.83) |
| GODC X PageRank | −6.05 (−13.45, 1.35) | −7.11 (−14.85, 0.63) | −10.11** (−17.56, −2.66) | −10.32* (−18.45, −2.18) |
| Trade/GDP | −0.22 (−1.24, 0.80) | 0.38 (−0.82, 1.58) | | 0.57 (−0.60, 1.73) |
| log GDP per capita | | −0.37** (−0.64, −0.10) | | −0.34* (−0.60, −0.07) |
| Democracy | | −0.01 (−0.50, 0.48) | | 0.04 (−0.45, 0.53) |
| Proscribed Behavior | | −0.50* (−0.95, −0.05) | | −0.53* (−0.98, −0.07) |
| US sender | | 0.72** (0.26, 1.18) | | 0.59* (0.14, 1.04) |
| Multilateral sanction | | 0.75** (0.23, 1.27) | | 0.50 (−0.10, 1.10) |
| Imposed sanction | | −0.74*** (−1.15, −0.33) | | −0.80*** (−1.21, −0.40) |
| Institution-backed sanction | | | | 0.64* (0.06, 1.22) |
| Colonial history | | | | −15.97 (−1,230.16, 1,198.23) |
| Ongoing armed conflict | | | | −0.06 (−0.56, 0.45) |
| Trade/Environment/Reform issue | −0.41 (−0.83, 0.02) | −0.24 (−0.70, 0.21) | −0.26 (−0.63, 0.10) | −0.01 (−0.45, 0.43) |
| Constant | −1.49*** (−1.92, −1.07) | 1.22 (−0.98, 3.42) | −1.49*** (−1.85, −1.13) | 16.85 (−1,197.34, 1,231.05) |
| Observations | 812 | 812 | 936 | 848 |
| Log Likelihood | −347.84 | −329.09 | −419.47 | −346.92 |

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.4: Replication of Table 1 examining acquiescence specifically to sanction threats (ignoring imposition stage)

| | Complete Acquiescence | | Complete or Partial Acquiescence | |
|-----------------------------------|----------------------------|----------------------------|----------------------------------|---------------------------|
| | Model A13 | Model A14 | Model A15 | Model A16 |
| Generalized out-degree centrality | -0.90 (-2.11, 0.31) | 0.51 (-0.96, 1.97) | -0.45 (-1.38, 0.48) | 0.54 (-0.63, 1.71) |
| PageRank | 3.29*** (1.45, 5.13) | 2.29* (0.14, 4.45) | 3.05*** (1.33, 4.76) | 2.51* (0.52, 4.50) |
| GODC X PageRank | -8.87* (-17.26, -0.48) | -11.00* (-20.44, -1.56) | -7.97* (-14.84, -1.11) | -9.95* (-17.55, -2.35) |
| Trade/GDP | 0.71 (-0.26, 1.68) | 1.27* (0.07, 2.46) | 0.40 (-0.48, 1.27) | 0.56 (-0.52, 1.64) |
| log GDP per capita | | -0.24 (-0.54, 0.06) | | -0.05 (-0.31, 0.22) |
| Democracy | | -0.10 (-0.66, 0.45) | | -0.27 (-0.74, 0.20) |
| Proscribed behavior | | -0.70** (-1.19, -0.21) | | -0.48* (-0.91, -0.06) |
| US sender | | 0.33 (-0.15, 0.82) | | 0.48* (0.07, 0.90) |
| Multilateral sanction | | 0.41 (-0.18, 0.99) | | 0.42 (-0.09, 0.93) |
| Trade/Environment/Reform issue | 0.24 (-0.20, 0.67) | 0.62* (0.11, 1.13) | 0.36 (-0.02, 0.74) | 0.67** (0.24, 1.11) |
| Constant | -2.15*** (-2.60, -1.70) | -0.48 (-2.95, 1.99) | -1.80*** (-2.19, -1.40) | -1.75 (-3.95, 0.45) |
| Observations | 916 | 848 | 916 | 848 |
| Log Likelihood | -339.42 | -286.87 | -425.82 | -371.07 |

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.5: Replication of Table 1 excluding cases with primarily economic issues

| | Complete Acquiescence | | Complete or Partial Acquiescence | |
|-----------------------------------|----------------------------|----------------------------|----------------------------------|---------------------------|
| | Model A17 | Model A18 | Model A19 | Model A20 |
| Generalized out-degree centrality | -3.27** (-5.55, -1.00) | -0.93 (-3.34, 1.48) | -0.38 (-1.51, 0.74) | 1.66** (0.28, 3.03) |
| PageRank | 3.29** (1.14, 5.43) | 2.92** (0.52, 5.32) | 3.54*** (1.61, 5.48) | 2.59** (0.44, 4.74) |
| GODC X PageRank | 1.81 (-8.46, 12.09) | 0.13 (-10.78, 11.03) | -5.57 (-12.55, 1.42) | -5.23 (-12.59, 2.13) |
| Trade/GDP | -0.63 (-1.82, 0.55) | -0.41 (-1.78, 0.95) | -0.94 (-2.01, 0.13) | -0.57 (-1.79, 0.66) |
| log GDP per capita | | -0.39** (-0.66, -0.12) | | -0.30** (-0.54, -0.06) |
| Democracy | | -0.01 (-0.58, 0.56) | | -0.32 (-0.83, 0.19) |
| Proscribed behavior | | -0.86*** (-1.37, -0.34) | | -0.72** (-1.19, -0.25) |
| US sender | | 1.05*** (0.49, 1.61) | | 0.93*** (0.46, 1.40) |
| Multilateral sanction | | 0.81** (0.28, 1.33) | | 0.87*** (0.41, 1.33) |
| Imposed sanction | | -0.32 (-0.79, 0.14) | | 0.03 (-0.37, 0.44) |
| Constant | -0.89*** (-1.30, -0.48) | 1.62 (-0.60, 3.84) | -0.60*** (-0.95, -0.25) | 1.21 (-0.80, 3.23) |
| Observations | 390 | 370 | 390 | 370 |
| Log Likelihood | -204.52 | -173.13 | -246.61 | -215.19 |

*** p less than 0.01, ** p less than 0.05, * p less than 0.1

or economic, issues: trade practices, environment, and economic reform, whereas these issues are included but identified in the primary models. The number of observations drops considerably in these models, but results remain largely consistent. Interaction terms show mixed results in these models (two positively signed, two negatively signed), but results remain consistent: partner connectedness is associated with a higher likelihood of target acquiescence under the specific condition that trade power is held at very levels.

Table A.6: Replication of Table 1 using an ordinal DV. Models A23 and A24 exclude cases with primarily economic issues

| | Ordinal Acquiescence (0 = none, 1 = partial, 2 = complete) | | | |
|-----------------------------------|--|------------------------------|-------------------------|---------------------------|
| | Model A21 | Model A22 | Model A23 | Model A24 |
| Generalized out-degree centrality | -0.17 (-0.98, 0.63) | 1.04* (0.03, 2.05) | -0.58 (-1.88, 0.73) | 1.52 (-0.07, 3.11) |
| PageRank | 5.34*** (3.44, 7.24) | 4.45*** (2.38, 6.52) | 3.98*** (1.70, 6.27) | 3.12* (0.62, 5.62) |
| GODC X PageRank | -10.39*** (-16.53, -4.26) | -10.93*** (-17.44, -4.42) | -5.91 (-14.20, 2.39) | -5.70 (-14.38, 2.97) |
| Trade/GDP | -0.09 (-0.90, 0.71) | 0.19 (-0.80, 1.19) | -0.91 (-2.18, 0.35) | -0.61 (-2.05, 0.83) |
| log GDP per capita | | -0.18 (-0.40, 0.05) | | -0.34* (-0.62, -0.06) |
| Democracy | | 1.05*** (0.64, 1.46) | | 0.78** (0.26, 1.30) |
| Proscribed behavior | | -0.28 (-0.69, 0.12) | | -0.24 (-0.84, 0.36) |
| US sender | | -0.39* (-0.77, -0.01) | | -0.75** (-1.29, -0.21) |
| Multilateral sanction | | 0.55** (0.19, 0.91) | | 0.90** (0.35, 1.44) |
| Imposed sanction | | -0.78*** (-1.12, -0.45) | | -0.04 (-0.51, 0.43) |
| Trade/Environment/Reform issue | -0.35* (-0.67, -0.02) | -0.10 (-0.46, 0.26) | | |
| Observations | 916 | 848 | 390 | 370 |

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.6 presents sanction threat episode models with an ordinal dependent variable, where 0 = no acquiescence, 1 = partial acquiescence, and 2 = total acquiescence. The first two models include all issues, while the third and fourth models exclude economic, “low politics” issues. All models are estimated with ordered logit. Both when including all cases and when excluding sanctions over “low politics,” results look nearly identical to those presented in Table 1.

Table A.7 replicates Table 1 including additional observations—specifically those cases in which the sender imposes sanctions directly, without first issuing a threat. I excluded these observations from the main models because I expected the consequences of vulnerability to be most apparent

Table A.7: Replication of Table 1 including cases that begin in the imposition stage

| | Complete Acquiescence | | Complete or Partial Acquiescence | |
|-----------------------------------|-----------------------|-----------------|----------------------------------|-----------------|
| | Model A25 | Model A26 | Model A27 | Model A28 |
| Generalized out-degree centrality | −0.93* | 0.34 | −0.51 | 0.63 |
| | (−1.91, 0.04) | (−0.82, 1.49) | (−1.26, 0.24) | (−0.30, 1.57) |
| PageRank | 4.44*** | 4.14*** | 4.05*** | 3.77*** |
| | (2.74, 6.15) | (2.22, 6.07) | (2.44, 5.65) | (1.97, 5.58) |
| GODC X PageRank | −5.63* | −6.86** | −5.50** | −6.49** |
| | (−11.81, 0.56) | (−13.39, −0.33) | (−10.67, −0.33) | (−11.95, −1.02) |
| Trade/GDP | −0.09 | 0.08 | −0.35 | −0.32 |
| | (−0.91, 0.74) | (−0.93, 1.09) | (−1.10, 0.39) | (−1.23, 0.60) |
| log GDP per capita | | −0.27** | | −0.14 |
| | | (−0.49, −0.05) | | (−0.34, 0.06) |
| Democracy | | 0.10 | | −0.25 |
| | | (−0.32, 0.52) | | (−0.61, 0.12) |
| Proscribed behavior | | −0.02 | | −0.03 |
| | | (−0.51, 0.47) | | (−0.44, 0.38) |
| US sender | | −0.51*** | | −0.34* |
| | | (−0.89, −0.13) | | (−0.68, 0.00) |
| Multilateral sanction | | 0.46** | | 0.59*** |
| | | (0.09, 0.84) | | (0.27, 0.91) |
| Threatened sanction | | 0.88*** | | 1.05*** |
| | | (0.46, 1.30) | | (0.68, 1.42) |
| Imposed sanction | | −0.82*** | | −0.81*** |
| | | (−1.21, −0.42) | | (−1.15, −0.47) |
| Trade/Environment/Reform issue | −0.40** | −0.24 | −0.55*** | −0.38** |
| | (−0.75, −0.05) | (−0.63, 0.14) | (−0.84, −0.25) | (−0.71, −0.05) |
| Constant | −1.46*** | 0.80 | −0.83*** | 0.30 |
| | (−1.80, −1.12) | (−1.08, 2.67) | (−1.13, −0.53) | (−1.38, 1.97) |
| Observations | 1,226 | 1,143 | 1,226 | 1,143 |
| Log Likelihood | −525.29 | −453.98 | −655.54 | −572.35 |

*** p less than 0.01, ** p less than 0.05, * p less than 0.1

when sanction costs had not yet occurred; however, results appear robust even when including these imposed-immediately cases.³

Table A.8: Replication of Table 1 including only cases where the sanction type threatened involves trade

| | Complete Acquiescence | | Complete or Partial Acquiescence | |
|-----------------------------------|----------------------------|----------------------------|----------------------------------|---------------------------|
| | Model A29 | Model A30 | Model A31 | Model A32 |
| Generalized out-degree centrality | -0.33 (-1.45, 0.80) | 0.78 (-0.70, 2.26) | 0.01 (-0.89, 0.90) | 1.11 (-0.11, 2.33) |
| PageRank | 4.25** (1.41, 7.09) | 3.96* (0.64, 7.28) | 3.59** (0.98, 6.19) | 3.52* (0.48, 6.55) |
| GODC X PageRank | -8.45 (-17.08, 0.18) | -10.53* (-20.26, -0.80) | -7.80* (-14.89, -0.71) | -9.86* (-17.80, -1.91) |
| Trade/GDP | -0.39 (-1.69, 0.90) | -0.44 (-2.22, 1.35) | -0.45 (-1.55, 0.65) | -0.66 (-2.18, 0.87) |
| log GDP per capita | | -0.04 (-0.41, 0.33) | | 0.05 (-0.27, 0.37) |
| Democracy | | 1.21*** (0.57, 1.85) | | 1.24*** (0.67, 1.80) |
| Proscribed behavior | | -0.15 (-0.82, 0.51) | | -0.42 (-0.98, 0.13) |
| US sender | | -0.35 (-0.97, 0.26) | | -0.20 (-0.73, 0.32) |
| Multilateral sanction | | 0.55* (0.00, 1.09) | | 0.86*** (0.40, 1.33) |
| Imposed sanction | | -0.59* (-1.12, -0.07) | | -0.66** (-1.09, -0.23) |
| Trade/Environment/Reform issue | -0.66** (-1.15, -0.16) | -0.14 (-0.78, 0.51) | -0.65** (-1.07, -0.23) | -0.24 (-0.78, 0.30) |
| Constant | -1.26*** (-1.80, -0.71) | -1.61 (-4.70, 1.47) | -0.73** (-1.21, -0.25) | -1.87 (-4.56, 0.82) |
| Observations | 649 | 584 | 649 | 584 |
| Log Likelihood | -259.84 | -208.35 | -337.86 | -277.12 |

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.8 examines only cases where the threatened sanction involves trade. That is, I exclude cases that involve only asset freezes, termination of foreign aid, or travel bans. Results are consistent despite the loss of nearly 400 observations.

1.3 Replication of Table 2

Table A.9 replicates Table 2 using generalized linear mixed models with logit link functions in place of simpler logit models. All models include state (sender) random effects. Again, all results are robust in these models.

Table A.10 recodes the sender initiation DV to include the initiation of sanctions that are im-

³However, supplemental analysis suggests that results are not robust when examining *only* cases that begin in the imposition stage.

Table A.9: Replication of Table 2 including state random effects

| | Initiation of any threat | | Initiation of non-economic threat | |
|------------------------------------|----------------------------|----------------------------|-----------------------------------|----------------------------|
| | Model A33 | Model A34 | Model A35 | Model A36 |
| Generalized out-degree centrality | 6.44*** (4.87, 8.01) | 6.64*** (4.61, 8.67) | 6.73*** (5.01, 8.45) | 7.53*** (5.25, 9.82) |
| PageRank | 0.39 (-1.44, 2.21) | -4.45 (-10.03, 1.13) | 0.76 (-1.20, 2.72) | -6.42 (-13.96, 1.13) |
| GODC X PageRank | -9.48** (-15.21, -3.75) | -4.10 (-13.74, 5.55) | -9.86** (-15.90, -3.82) | -4.25 (-16.03, 7.53) |
| Trade/GDP | -0.43 (-1.24, 0.39) | 0.66 (-0.95, 2.27) | -0.39 (-1.34, 0.57) | 0.40 (-1.66, 2.46) |
| log GDP per capita | 0.34*** (0.14, 0.54) | 0.41 (-0.09, 0.90) | 0.28* (0.05, 0.50) | 0.44 (-0.13, 1.00) |
| Democracy | 0.02 (-0.40, 0.44) | 0.02 (-0.72, 0.75) | -0.26 (-0.78, 0.26) | -0.42 (-1.26, 0.41) |
| Proscribed behavior proximity | -0.11 (-0.39, 0.16) | -0.49* (-0.95, -0.04) | 0.11 (-0.21, 0.43) | -0.11 (-0.67, 0.44) |
| Years since initiated | -0.10** (-0.18, -0.03) | -0.13 (-0.27, 0.02) | -0.01 (-0.10, 0.07) | -0.03 (-0.19, 0.13) |
| Years since initiated ² | 0.00 (-0.00, 0.01) | 0.00 (-0.00, 0.01) | -0.00 (-0.01, 0.00) | 0.00 (-0.01, 0.01) |
| Years since initiated ³ | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) |
| Constant | -6.72*** (-8.41, -5.03) | -7.48** (-12.68, -2.28) | -6.96*** (-8.89, -5.04) | -8.59** (-14.65, -2.53) |
| Observations | 7,364 | 1,640 | 7,364 | 1,640 |
| Log Likelihood | -1,062.70 | -400.45 | -850.44 | -318.13 |
| Bayesian Inf. Crit. | 2,232.26 | 897.13 | 1,807.74 | 732.48 |

Models A25 and A27 include all states; Models A26 and A28 include only high-income states

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.10: Replication of Table 2 including sanctions imposition as well as threats

| | Initiation of any sanction | | Initiation of non-economic sanction | |
|------------------------------------|-----------------------------|-----------------------------|-------------------------------------|-----------------------------|
| | Model A37 | Model A38 | Model A39 | Model A40 |
| Generalized out-degree centrality | 5.86*** (4.85, 6.86) | 5.35*** (4.03, 6.68) | 5.49*** (4.53, 6.44) | 5.34*** (4.02, 6.67) |
| PageRank | -0.55 (-1.89, 0.79) | -3.44 (-7.11, 0.23) | 0.18 (-1.16, 1.53) | -3.52 (-7.90, 0.86) |
| GODC X PageRank | -7.76*** (-12.19, -3.33) | -1.36 (-8.54, 5.82) | -6.66** (-10.94, -2.37) | -0.12 (-7.72, 7.49) |
| Trade/GDP | -0.16 (-0.75, 0.43) | 0.26 (-0.61, 1.14) | -0.39 (-1.09, 0.32) | -0.57 (-1.67, 0.53) |
| log GDP per capita | 0.20** (0.07, 0.32) | 0.42* (0.08, 0.76) | 0.20** (0.06, 0.33) | 0.52** (0.15, 0.88) |
| Democracy | -0.22 (-0.49, 0.05) | 0.04 (-0.42, 0.50) | -0.42* (-0.75, -0.09) | -0.26 (-0.78, 0.27) |
| Proscribed behavior | -0.00 (-0.17, 0.16) | -0.35* (-0.62, -0.07) | 0.13 (-0.05, 0.31) | -0.16 (-0.48, 0.16) |
| Years since initiated | -0.18*** (-0.23, -0.12) | -0.10* (-0.20, -0.01) | -0.12*** (-0.18, -0.05) | -0.01 (-0.12, 0.09) |
| Years since initiated ² | 0.00** (0.00, 0.01) | 0.00 (-0.00, 0.01) | 0.00 (-0.00, 0.01) | -0.00 (-0.01, 0.00) |
| Years since initiated ³ | -0.00 (-0.00, 0.00) | 0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | 0.00 (-0.00, 0.00) |
| Constant | -4.08*** (-5.10, -3.06) | -6.51*** (-10.11, -2.92) | -4.48*** (-5.64, -3.33) | -7.79*** (-11.74, -3.84) |
| Observations | 7,364 | 1,640 | 7,364 | 1,640 |
| Log Likelihood | -1,307.71 | -479.63 | -1,058.42 | -394.71 |

Models A29 and A31 include all states; Models A30 and A32 include only high-income states

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

posed immediately as well as those that begin with a threat stage (following logic similar to that discussed above with respect to Table A.7). Again, all results are robust.

Table A.11: Replication of Table 2 using DVs for counts of sanction initiations

| | Count of sanctions | | Count of non-economic sanctions | |
|------------------------------------|----------------------------|----------------------------|---------------------------------|-----------------------------|
| | Model A41 | Model A42 | Model A43 | Model A44 |
| Generalized out-degree centrality | 4.64*** (3.86, 5.43) | 3.37*** (2.59, 4.16) | 4.55*** (3.73, 5.37) | 3.63*** (2.82, 4.45) |
| PageRank | -1.33* (-2.58, -0.09) | -6.41*** (-9.70, -3.12) | 0.14 (-1.04, 1.33) | -4.32* (-8.07, -0.57) |
| GODC X PageRank | -5.72** (-9.81, -1.62) | 3.45 (-2.16, 9.07) | -4.98* (-9.06, -0.90) | 2.57 (-3.14, 8.27) |
| Trade/GDP | -0.06 (-0.61, 0.50) | 0.89* (0.14, 1.64) | -0.68* (-1.35, -0.01) | -0.47 (-1.39, 0.45) |
| log GDP per capita | 0.26*** (0.14, 0.37) | 0.49*** (0.22, 0.77) | 0.27*** (0.14, 0.40) | 0.67*** (0.39, 0.95) |
| Democracy | -0.22 (-0.48, 0.04) | 0.20 (-0.19, 0.60) | -0.63*** (-0.94, -0.31) | -0.06 (-0.52, 0.39) |
| Proscribed behavior proximity | -0.14 (-0.30, 0.03) | -0.47*** (-0.72, -0.23) | 0.04 (-0.14, 0.22) | -0.15 (-0.42, 0.12) |
| Years since initiated | -0.19*** (-0.24, -0.13) | -0.22*** (-0.31, -0.13) | -0.12*** (-0.19, -0.06) | -0.10* (-0.20, -0.01) |
| Years since initiated ² | 0.00** (0.00, 0.01) | 0.01** (0.00, 0.01) | 0.00 (-0.00, 0.01) | 0.00 (-0.00, 0.01) |
| Years since initiated ³ | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) |
| Constant | -3.82*** (-4.76, -2.87) | -6.15*** (-9.09, -3.21) | -4.41*** (-5.46, -3.36) | -8.44*** (-11.54, -5.34) |
| Observations | 7,364 | 1,640 | 7,364 | 1,640 |
| Log Likelihood | -2,229.80 | -1,049.10 | -1,639.10 | -730.49 |
| θ | 0.21*** (0.02) | 0.47*** (0.05) | 0.23*** (0.03) | 0.71*** (0.12) |

Models A33 and A35 include all states; Models A34 and A36 include only high-income states
 *** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.11 presents a replication of Table 2 in which the DV is coded as a count of sanction initiations rather than a binary indicator. All models are estimated with negative binomial regressions. Results, again, are robust in these models.

Table A.12 replicates Table 2 in the main paper using a more complex indicator of proximity to proscribed behavior. Specifically, using directed dyad-year data, I code a continuous indicator equal to 1 divided by the logged distance from the state to a dyadic partner engaged in proscribed behavior, and then multiply this value by the state's CINC score, using the CINC version 5.0 data (Singer 1987). If the dyadic partner is not engaged in proscribed behavior, this indicator is coded as missing. I then sum these values by state-year to produce a continuous measure that takes higher values as more badly-behaving states are proximate to a given prospective sender—more-so for prospective senders with higher capabilities. Results again are consistent in these models.

Table A.12: Replication of Table 2 using weighted proximity to proscribed behavior variable

| | Initiation of any threat | | Initiation of non-economic threat | |
|-------------------------------------|----------------------------|-----------------------------|-----------------------------------|-----------------------------|
| | Model 45 | Model 46 | Model 47 | Model 48 |
| Generalized out-degree centrality | 4.52*** (3.19, 5.85) | 3.76*** (1.81, 5.70) | 4.87*** (3.44, 6.31) | 3.67*** (1.63, 5.72) |
| PageRank | -0.54 (-2.09, 1.01) | -2.61 (-6.48, 1.26) | -0.38 (-2.04, 1.27) | -5.41* (-10.50, -0.33) |
| GODC X PageRank | -5.05 (-10.14, 0.04) | -0.65 (-8.49, 7.19) | -4.92 (-10.29, 0.45) | 3.71 (-5.17, 12.59) |
| Trade/GDP | -0.18 (-0.84, 0.48) | -0.23 (-1.16, 0.71) | -0.09 (-0.88, 0.69) | -0.27 (-1.46, 0.92) |
| log GDP per capita | 0.34*** (0.21, 0.48) | 0.49** (0.14, 0.85) | 0.30*** (0.15, 0.46) | 0.53** (0.14, 0.91) |
| Democracy | -0.10 (-0.40, 0.20) | 0.28 (-0.24, 0.79) | -0.41* (-0.78, -0.05) | -0.07 (-0.64, 0.51) |
| US dummy | -0.89 (-2.00, 0.23) | 0.00 (-2.03, 2.03) | 0.17 (-0.94, 1.28) | 0.14 (-1.85, 2.12) |
| Wght. proscribed behavior proximity | 1.01** (0.28, 1.74) | 0.26 (-2.03, 2.54) | 0.28 (-0.53, 1.10) | 0.62 (-1.67, 2.91) |
| Years since initiated | -0.18*** (-0.24, -0.11) | -0.21*** (-0.33, -0.10) | -0.11** (-0.18, -0.03) | -0.05 (-0.17, 0.08) |
| Years since initiated ² | 0.01** (0.00, 0.01) | 0.01* (0.00, 0.02) | 0.00 (-0.00, 0.01) | -0.00 (-0.01, 0.01) |
| Years since initiated ³ | -0.00* (-0.00, -0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) |
| Constant | -5.63*** (-6.83, -4.43) | -6.90*** (-10.69, -3.12) | -5.66*** (-6.99, -4.33) | -7.66*** (-11.89, -3.44) |
| Observations | 7,364 | 1,640 | 7,364 | 1,640 |
| Log Likelihood | -1,087.11 | -428.46 | -878.01 | -351.87 |

Models 5 and 7 include all states; Models 6 and 8 include only high-income states

*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.13: Replication of Table 2 including veto players measure

| | Initiation of any threat | | Initiation of non-economic threat | |
|------------------------------------|----------------------------|-----------------------------|-----------------------------------|----------------------------|
| | Model 49 | Model 50 | Model 51 | Model 52 |
| Generalized out-degree centrality | 5.58*** (4.40, 6.76) | 4.10*** (2.52, 5.68) | 5.42*** (4.17, 6.67) | 4.15*** (2.46, 5.84) |
| PageRank | -0.80 (-2.47, 0.87) | -4.02 (-8.22, 0.18) | -0.43 (-2.22, 1.35) | -6.23* (-11.67, -0.80) |
| GODC X PageRank | -7.06** (-12.16, -1.96) | 1.29 (-6.78, 9.36) | -6.33* (-11.65, -1.02) | 3.81 (-5.39, 13.01) |
| Trade/GDP | 0.02 (-0.69, 0.72) | 0.50 (-0.57, 1.57) | 0.06 (-0.77, 0.88) | -0.08 (-1.42, 1.27) |
| log GDP per capita | 0.28*** (0.14, 0.42) | 0.45* (0.09, 0.82) | 0.30*** (0.15, 0.45) | 0.48* (0.09, 0.88) |
| Democracy | 0.17 (-0.23, 0.58) | 0.60 (-0.10, 1.30) | 0.21 (-0.29, 0.72) | 0.37 (-0.39, 1.13) |
| US dummy | -0.47 (-1.54, 0.60) | 0.00 (-1.15, 1.16) | 0.23 (-0.81, 1.28) | 0.46 (-0.68, 1.59) |
| Political constraints | -1.10* (-1.97, -0.23) | -0.96 (-2.40, 0.48) | -2.03*** (-3.12, -0.93) | -1.28 (-2.90, 0.33) |
| Proscribed behavior proximity | -0.02 (-0.22, 0.18) | -0.41* (-0.73, -0.08) | 0.18 (-0.03, 0.39) | -0.07 (-0.42, 0.29) |
| Years since initiated | -0.19*** (-0.25, -0.12) | -0.20*** (-0.32, -0.08) | -0.10* (-0.18, -0.02) | -0.05 (-0.17, 0.08) |
| Years since initiated ² | 0.01** (0.00, 0.01) | 0.01 (-0.00, 0.01) | 0.00 (-0.00, 0.01) | 0.00 (-0.01, 0.01) |
| Years since initiated ³ | -0.00* (-0.00, -0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) | -0.00 (-0.00, 0.00) |
| Constant | -4.98*** (-6.15, -3.81) | -6.61*** (-10.53, -2.70) | -5.66*** (-6.99, -4.32) | -7.18** (-11.54, -2.81) |
| Observations | 7,159 | 1,635 | 7,159 | 1,635 |
| Log Likelihood | -1,058.25 | -417.68 | -840.98 | -343.90 |

Models 5 and 7 include all states; Models 6 and 8 include only high-income states
*** p less than 0.001, ** p less than 0.01, * p less than 0.05

Table A.13 replicates Table 2 in the main paper including an additional variable for veto players—specifically political constraints from Henisz (2002). Again, all results are robust, while a greater number of veto players is associated with a lower likelihood of initiating a sanction threat, as expected.

1.4 Summary Stats

Finally, I present summary statistics. Given that I include models at two levels of analysis, I provide two tables of summary states. Specifically, Table A.14 presents the summary statistics for variables used in sanction threat episode models, while Table A.15 presents summary statistics for variables used in state-year models (for both sender initiation and target onset).

Table A.14: Summary stats for sanction case models

| Statistic | N | Mean | St. Dev. | Min | Max |
|-----------------------------------|-----|--------|----------|--------|--------|
| Complete acquiescence | 936 | 0.198 | 0.398 | 0 | 1 |
| Partial acquiescence | 936 | 0.287 | 0.453 | 0 | 1 |
| Generalized out-degree centrality | 936 | 0.323 | 0.300 | 0.0004 | 1.000 |
| PageRank | 936 | 0.119 | 0.130 | 0.004 | 1.000 |
| Multilateral sanction | 936 | 0.163 | 0.370 | 0 | 1 |
| Imposed sanction | 936 | 0.459 | 0.499 | 0 | 1 |
| Economic Issue | 936 | 0.565 | 0.496 | 0 | 1 |
| log GDP per capita | 916 | 8.969 | 1.113 | 5.315 | 10.840 |
| Trade/GDP | 916 | 0.292 | 0.212 | 0.009 | 1.000 |
| Democracy | 936 | 0.524 | 0.500 | 0 | 1 |
| Proscribed behavior | 936 | 0.731 | 0.444 | 0 | 1 |
| Institution sender | 936 | 0.287 | 0.453 | 0 | 1 |
| US sender | 867 | 0.572 | 0.495 | 0 | 1 |
| Years since major Polity change | 890 | 39.312 | 50.442 | 0 | 194 |

Table A.15: Summary stats for state-year models

| Statistic | N | Mean | St. Dev. | Min | Max |
|---|-------|--------|----------|---------|--------|
| Sender initiation of any threat | 7,602 | 0.059 | 0.235 | 0 | 1 |
| Years since last sender initiation (all) | 7,602 | 15.299 | 13.250 | 0 | 54 |
| Sender initiation of non-economic threat | 7,602 | 0.045 | 0.206 | 0 | 1 |
| Years since last sender initiation (non-economic) | 7,602 | 16.433 | 13.781 | 0 | 54 |
| Target onset of any threat | 7,602 | 0.094 | 0.292 | 0 | 1 |
| Years since last target onset (all) | 7,602 | 10.638 | 10.532 | 0 | 49 |
| Target onset of non-economic threat | 7,602 | 0.051 | 0.221 | 0 | 1 |
| Years since last target onset (non-economic) | 7,602 | 12.786 | 11.329 | 0 | 54 |
| Generalized out-degree centrality | 7,579 | 0.115 | 0.154 | 0.000 | 1.000 |
| PageRank | 7,579 | 0.155 | 0.151 | 0.0003 | 1.000 |
| log GDP per capita | 7,364 | 8.263 | 1.166 | 4.889 | 13.357 |
| Trade/GDP | 7,364 | 0.291 | 0.240 | 0.00000 | 1.000 |
| Democracy | 7,579 | 0.288 | 0.453 | 0 | 1 |
| Years since major Polity change | 6,806 | 20.789 | 27.415 | 0 | 195 |
| Proximity to prosc. behavior (count) | 7,602 | 0.306 | 0.611 | 0 | 4 |
| Proximity to prosc. behavior (weight) | 7,602 | 0.050 | 0.164 | 0.000 | 1.830 |
| US dummy | 7,602 | 0.007 | 0.085 | 0 | 1 |
| Former colony | 7,602 | 0.970 | 0.170 | 0 | 1 |
| log Population | 7,364 | 8.667 | 1.810 | 2.197 | 14.061 |

References

- Henisz, W. J. 2002. "The political constraint index (polcon) dataset." Available from: <https://mgmt.wharton.upenn.edu/profile/1327>.
- Singer, J. David. 1987. "Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816-1985." *International Interactions* 14:115–132.